UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/681,050	12/08/2000	D. Maxwell Chickering	1018.121US1	6216

7590   05/11/2004

Himanshu S. Amin
AMIN & TUROCY, LLP
24th Floor, National City Center
1900 East 9th Street
Cleveland, OH 44114

EXAMINER
ROBINSON BOYCE, AKIBA K

ART UNIT	PAPER NUMBER
3623	

DATE MAILED: 05/11/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

		Application No.	Applicant(s)
Office Action Summary		09/681,050	CHICKERING ET AL.
		Examiner	Art Unit
		Akiba K Robinson-Boyce	3623

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>08 December 2000</u>.
2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.
3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-27</u> is/are pending in the application.
    4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5)☐ Claim(s) _____ is/are allowed.
6)☒ Claim(s) <u>1-11,13-24,26 and 27</u> is/are rejected.
7)☐ Claim(s) <u>12 and 25</u> is/are objected to.
8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.
10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.
    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
    a)☐ All   b)☐ Some * c)☐ None of:
    1.☐ Certified copies of the priority documents have been received.
    2.☐ Certified copies of the priority documents have been received in Application No. _____.
    3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>12/15/00, 12/26/00</u>.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Status of Claims

1.   Due to communications filed 12/8/00, the following is a non-final first office action. Claims 1-27 are pending in this application and have been examined on the merits. Claims 1-27 are rejected as follows.

Claim Rejections - 35 USC § 112

2.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3.   Claim 6 recites the limitation ""the purchase variable" in lines 5-6. There is insufficient antecedent basis for this limitation in the claim.

Claim Rejections - 35 USC § 101

4.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5.   Claims 1-22 and 24-26 are rejected under 35 U.S.C. 101 because the claimed invention is directed to a non-statutory subject matter.

The basis of this rejection is set forth in a two-prong test of :

(1) whether the invention is within the technological arts; and

(2) whether the invention produces a useful, concrete, and tangible result.

For a claimed invention to be statutory, the claimed invention must be within the technological arts. Mere ideas in the abstract (i.e., abstract idea, law of nature, natural phenomena that do not apply, involve, use, or advance the technological arts fail to promote the "progress of science and the useful art" (i.e., the physical sciences as opposed to social sciences, for example) and therefore are found to be non-statutory subject matter. For a process claim, the recited process must somehow apply, involve, use, or advance the technological arts.

In the present case, claim 1 is directed to a method for soliciting a sub-population of a population. Claim 1 recites the steps of "identifying the sub-population...", and "soliciting the sub-population". These steps represent mere ideas in the abstract since they do not comprise physical means or software embodied on a tangible medium to carry out this process. Since these means do not exist, claim 1 and all claims that depend from it are therefore are found to be non-statutory.

Additionally, for a claimed invention to be statutory, the claimed invention must produce a useful, concrete, and tangible result.

In the present case, claim 1 is directed to a method for soliciting a sub-population of a population. Claim 1 recites the steps of "identifying the sub-population...", and "soliciting the sub-population". These steps do not produce a useful, concrete, and

tangible result, thereby making the claim and all claims that depend from it non-statutory.

In the present case, claims 11 and 24 are directed to a method for constructing a decision theoretic model to identify a sub-population of a population to solicit to maximize an expected increase in profits. Claims 11 and 24 recite the steps of "performing an experiment...", "constructing a decision tree...", "applying the decision tree...". These steps represent mere ideas in the abstract since they do not comprise physical means or software embodied on a tangible medium to carry out this process. Since these means do not exist, claim 11 and claims 12-22, all which depend from claim 11, and claim 24, and claims 25-26, all which depend from claim 24 are therefore found to be non-statutory.

Claim Rejections - 35 USC § 103

6.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

7.   Claims 1, 10, are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom (US 5,696,907).

As per claims 1, 10, Tom discloses:

Identifying the sub-population to solicit by using a decision theoretic model, the decision theoretic model constructed to maximize an expected increase in profits, (Col. 7, lines 10-22, [selecting10% lowest and highest applications, evaluating a set of sample financial service applications using a hierarchical neural network model {represents the decision theoretic model}, focusing on not having much increase in loss, {represents the maximization of profits since the lower the loss, the greater the profit, where the performance of the risk and credit analysis on financial service applications represents the solicitation]]; and

Soliciting the sub-population identified, (Col. 8, lines 8-10, [providing data from the application to be evaluated]).

Tom doesn't specifically use the word "solicit", however, the performance of risk and credit analysis on financial service applications represents the solicitation since financial applications can be evaluated for risk and credit analysis in order to urge, entice or lure an applicant into getting a financial service.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to solicit applicants with the motivation of enticing the applicant to receive a financial service.

As per claim 10, Tom doesn't specifically disclose:
Wherein soliciting the sub-population identified comprises calling each of a plurality of members of the sub-population. However, Tom does disclose a system that uses decision process and model to perform an evaluation of a sub-population represented by organized groups in Col. 7, lines 10-22.

Official notice is taken that it is old and well known in the solicitation art to call each of a plurality of members of the sub-population with the motivation of successfully attempting to contact the members by telephone. It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to call each of a plurality of members of a sub-population with the motivation of using telephonic means to contact members and make a decision after the evaluation process.

8.   Claims 2-4, 6, 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom (US 5,696,907) as applied to claim1 above, and further in view of Kohavi (US 6,182,058).

As per claim 2, Tom fails to disclose "wherein using the decision theoretic model comprises using a decision tree, the decision tree having a plurality of paths from a root node to a plurality of leaf nodes, each of the plurality of paths having a split on a solicitation variable having a first value corresponding to solicitation and a second value corresponding to non-solicitation", but does disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

wherein using the decision theoretic model comprises using a decision tree, the decision tree having a plurality of paths from a root node to a plurality of leaf nodes, each of the plurality of paths having a split on a solicitation variable having a first value corresponding to solicitation and a second value corresponding to non-solicitation, (Col. 3, lines 10-16, Fig. 6 [616], where the solicit value is represented by the make route

node a decision node, and the non-solicit value is represented by make route node a leaf node]). Kohavi discloses this limitation in an analogous art for the purpose of showing that decision nodes are used to determine a solution for certain attributes.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to utilize a decision tree with the motivation of showing that solutions that come from the decision tree can go through several paths to come up with a solution.

As per claim 3, Tom fails to disclose "wherein the decision tree is constructed such that the split on the solicitation variable of each of the plurality of paths is a last s p l it ", but does disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However Kohavi discloses:

wherein the decision tree is constructed such that the split on the solicitation variable of each of the plurality of paths is a last split, (Col. 4, lines 54-67, [when test result = true, classification occurs and a label is output, this represents the last split]). Kohavi discloses this limitation in an analogous art for the purpose of showing that the last split leads to the final decision.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to construct the decision tree such that the split on the solicitation variable represents the last split with the motivation on determining a final decision on the solicitation variable in order to decide who to solicit.

As per claim 4, Tom fails to disclose "wherein the decision tree is constructed such that the split on the solicitation variable of each of the plurality of paths is a first Split", but does disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However Kohavi discloses:

wherein the decision tree is constructed such that the split on the solicitation variable of each of the plurality of paths is a first Split, (Col. 4, lines 54-67, Fig. 6, [when test result = no, the path will lead back to the beginning of the process]). Kohavi discloses this feature in an analogous art for the purpose of showing that a decision can occur at the beginning of the process.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to construct a decision tree such that the split on the solicitation variable of each of the plurality of paths is a first split with the motivation of showing that a decision with respect to solicitation can occur at the beginning of a process.

As per claim 6, Tom discloses:

a sample of the population using a predetermined scoring criterion, (Col. 7,lines 54-55, [previously approved applications],

a probability conditional, (Col. 2, lines 22-28, [compute probability of each class given an instance]).

Tom fails to disclose constructing the decision tree from, each of the plurality of leaf nodes of the tree providing a value...on at least the purchase variable, but does

disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However Kohavi discloses:

constructing the decision tree from, each of the plurality of leaf nodes of the tree providing a value..., (Col. 3, lines 10-16, [shows the decision tree contains root, leaf nodes])

applying the decision tree against the population to identify the sub-population to solicit to maximize the expected increase in profits, (Col. 7, line 64-Col. 8, line 2, [classifier applying the decision tree to produce an output]).

Kohavi discloses the above limitations in an analogous art for the purpose of producing an output by means of a decision tree.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to construct a decision tree and apply a decision tree with the motivation of utilizing a decision tree to produce an output.

As per claim 8, Tom fails to disclose wherein soliciting the sub-population identified comprises mailing a solicitation to each of a plurality of members of the sub-population, but does disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

wherein soliciting the sub-population identified comprises mailing a solicitation to each of a plurality of members of the sub-population, (Col. 1, lines 52-57, [mail sent only

to people who are labeled by classifier). Kohavi discloses this limitation in an analogous art for the purpose of sending mail to a population during a campaign.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to mail a solicitation to each of a plurality of members of the sub-population with the motivation of utilizing postal services for solicitation.

9. Claims 5, 7, 11, 13-24, 26 and 27 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tom (US 5,696,907) as applied to claim1 above, and further in view of Kohavi (US 6,182,058), and Pilipovic (US 6,456,982).

As per claim 5, Tom fails to disclose wherein each of the plurality of leaf nodes provides a value for a probability conditional on at least a purchase variable, but Tom does disclose a system that uses decision process and model to perform an evaluation in Col. 7, lines 10-22.

However, Kohavi discloses wherein each of the plurality of leaf nodes provides a value for a probability conditional on at least a purchase variable in Col. 2, line 22-28 where the computation of the probability of each class given an instance. Kohavi discloses this limitation in an analogous art for the purpose of showing that a decision can be made based on particular conditions.

Neither Tom, not Kohavi disclose having a first value corresponding to purchase and a second value corresponding to non-purchase.

However, Pilipovic discloses:

having a first value corresponding to purchase and a second value corresponding to non-purchase, (Col. 92, lines 23-28, [buy/keep decision]). Pilipovic

discloses this limitation in an analogous art for the purpose of showing that a buy/keep decision node can be incorporated into a decision system.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have values corresponding to purchase and non-purchase with the motivation of showing that a decision can comprise the usage of purchase variables.

As per claim 7, Tom discloses:

wherein identifying the sub-population to solicit further initially comprises performing an experiment using the sample of the population to obtain values for the sample of the population for each of the solicitation variable, (col. 7, lines 53-67, [applying to groups]),

Neither Tom, nor Kohavi disclose "and a purchase variable, the purchase variable having a first value corresponding to purchase and a second value corresponding to non-purchase".

However, Pilipovic discloses:

"and a purchase variable, the purchase variable having a first value corresponding to purchase and a second value corresponding to non-purchase", (Col. 92, lines 23-28, [buy/keep decision]). Pilipovic discloses this limitation in an analogous art for the purpose of showing that a buy/keep decision node can be incorporated into a decision system.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to have values corresponding to purchase and non-purchase with the motivation of showing that a decision can comprise the usage of purchase variables.

As per claims 11, 24, Tom discloses:

performing an experiment using a sample of the population to obtain

values for the sample of the population for each of a solicitation

variable, (col. 7, lines 10-22, [sample financial service applications]),

Tom fails to disclose "and a purchase variable, the solicitation variable having a

first value corresponding to solicitation and a second value corresponding

to non-solicitation", but does disclose a system that uses decision process and model to

perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

and a purchase variable, the solicitation variable having a first value

corresponding to solicitation and a second value corresponding

to non-solicitation, (Col. 3, lines 10-16, Fig. 6 [616], where the solicit value is

represented by the make route node a decision node, and the non-solicit value is

represented by make route node a leaf node]). Kohavi discloses this limitation in an

analogous art for the purpose of showing that decision nodes are used to determine a

solution for certain attributes.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to utilize a decision tree with the motivation of showing that

solutions that come from the decision tree can go through several paths to come up with

a solution.

Tom fails to disclose "constructing a decision tree as the decision theoretic model

from the sample using a predetermined scoring criterion, the decision tree

having a plurality of paths from a root node to a plurality of leaf

nodes, each of the plurality of paths having a split on the solicitation

variable, and each of the plurality of leaf nodes providing a value for a

probability conditional on at least the purchase variable', and, applying the decision tree

against the population to identify the sub-population to solicit to maximize the expected

increase in profits, but does disclose a system that uses decision process and model to

perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

Constructing a decision tree as the decision theoretic model from the sample

using a predetermined scoring criterion, the decision tree having a plurality of paths

from a root node to a plurality of leaf nodes, each of the plurality of paths having a split

on the solicitation variable, and each of the plurality of leaf nodes providing a value for a

probability conditional on at least the purchase variable', and, applying the decision tree

against the population to identify the sub-population to solicit to maximize the expected

increase in profits, (Col. 3, lines 10-16, Fig. 6 [616], where the solicit value is

represented by the make route node a decision node, and the non-solicit value is

represented by make route node a leaf node, col. 3, lines 17-31, [where applying the

decision tree is represented by inducing the NB-Tree classifier]). Kohavi discloses this

limitation in an analogous art for the purpose of showing that decision nodes are used to

determine a solution for certain attributes.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to utilize a decision tree with the motivation of showing that

solutions that come from the decision tree can go through several paths to come up with

Neither Tom, nor Kohavi disclose "and a purchase variable, the purchase

variable having a first value corresponding to purchase and a second value

corresponding to non-purchase".

However, Pilipovic discloses:

"and a purchase variable, the purchase variable having a

first value corresponding to purchase and a second value corresponding to

non-purchase", (Col. 92, lines 23-28, [buy/keep decision]). Pilipovic discloses this

limitation in an analogous art for the purpose of showing that a buy/keep decision node

can be incorporated into a decision system.

It would have been obvious to one of ordinary skill in the art at the time of the

applicant's invention to have values corresponding to purchase and non-purchase with

the motivation of showing that a decision can comprise the usage of purchase variables.

As per claim 13, Tom fails to disclose wherein construction the decision tree

comprises using a greedy approach, however discloses disclose a system that uses

decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

wherein construction the decision tree comprises using a greedy approach in

Fig.5, [500], in this figure, a plurality of interim leaf nodes shown in [516, 520,524, 528,

and 532] are disclosed, which is a greedy approach. Kohavi discloses this approach in

an analogous art for the purpose of showing an alternative approach for constructing a decision tree where many decision points will exist.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use a greedy approach with the motivation of using a decision tree that will generate many decision points.

As per claim 14, Tom fails to disclose wherein the predetermined scoring criterion is a holdout criterion, however discloses disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

wherein the predetermined scoring criterion is a holdout criterion, (col. 8, lines 40-42, [holdout]. Kohavi discloses this limitation in an analogous art for the purpose of showing different methods of scoring in order to make a decision.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use holdout criterion with the motivation of using holdout criterion in order to generate a score.

As per claim 15, Tom fails to disclose wherein the predetermined scoring criterion is a cross-validation holdout criterion, however discloses a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

wherein the predetermined scoring criterion is a cross-validation holdout criterion, (Col. 8, lines 40-42, [cross-validation]). Kohavi discloses this limitation in an analogous art for the purpose of showing different methods of scoring in order to make a decision.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use cross-validation criterion with the motivation of using cross-validation data in order to generate a score.

As per claims 16 and 17, neither Tom, Kohavi, nor Pilipovic discloses wherein the predetermined scoring criterion is a marginal likelihood criterion/wherein the predetermined scoring criterion is an adjusted marginal likelihood criterion, but Tom does disclose analyzing previously approved financial service applications to perform risk and credit analysis by optimizing weighted connections in Col. 7, line 53-Col. 8, line 8.

However official notice is taken that it is old and well known in the solicitation art to use a marginal likelihood criterion or an adjusted marginal likelihood criterion. It would have been obvious to one of ordinary skill in the art to use a marginal likelihood criterion or an adjusted marginal likelihood criterion with the motivation of using an alternative method of scoring members and scoring with respect to how likely a member would meet the criterion.

As per claim 18, Tom fails to disclose "wherein the split on the solicitation variable of each of the plurality of paths is a last split ", but does disclose a system that uses decision process and model to perform an evaluation in Col. 7, lines 10-22.

However Kohavi discloses:

wherein the split on the solicitation variable of each of the plurality of paths is a last split, (Col. 4, lines 54-67, [when test result = true, classification occurs and a label is

output, this represents the last split]). Kohavi discloses this limitation in an analogous art for the purpose of showing that the last split leads to the final decision.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to construct the decision tree such that the split on the solicitation variable represents the last split with the motivation on determining a final decision on the solicitation variable in order to decide who to solicit.

As per claim 19, Tom fails to disclose the following, but does disclose a system that uses decision process and model to perform an evaluation in Col. 7, lines 10-22.

However Kohavi discloses:

initializing the decision tree with an initial single leaf node as the root node, (Fig. 5 [504]) ;

using the greedy approach to construct the decision tree with no splits on the solicitation variable, the decision tree after construction using the greedy approach having a plurality of interim leaf nodes', and,

performing a split on the solicitation variable at each of the plurality of interim leaf nodes to generate the plurality of leaf nodes, (Fig. 5, [504], shows a plurality of leaf nodes in [516, 520, 524, 528, 532]). Kohavi discloses these limitations in an analogous art for the purpose of showing how the decision tree branches off into a plurality of decision points.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use a greedy approach with the motivation of using a decision tree that will generate many decision points.

As per claim 20, Tom fails to disclose "wherein the split on the solicitation variable of each of the plurality of paths is a first split at the root node", but does disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However Kohavi discloses:

wherein the split on the solicitation variable of each of the plurality of paths is a first split at the root node, (Col. 4, lines 54-67, Fig. 6, [when test result = no, the path will lead back to the beginning of the process]). Kohavi discloses this feature in an analogous art for the purpose of showing that a decision can occur at the beginning of the process.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to construct a decision tree such that the split on the solicitation variable of each of the plurality of paths is a first split with the motivation of showing that a decision with respect to solicitation can occur at the beginning of a process.

As per claim 21, Tom fails to disclose "initializing the decision tree with the first split at the root node on the solicitation variable ", but does disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However Kohavi discloses:

initializing the decision tree with the first split at the root node on the solicitation variable, (Col. 4, lines 54-67, Fig. 5 [504], [first split to [508] and [512] occurs at the root nod [504]). Kohavi discloses this feature in an analogous art for the purpose of showing that a decision can occur at the beginning of the process.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to construct a decision tree such that the split on the solicitation variable of each of the plurality of paths is a first split with the motivation of showing that a decision with respect to solicitation can occur at the beginning of a process.

using a greedy approach to finish constructing the decision tree, (Fig. 5, [504], shows a plurality of leaf nodes in [516, 520, 524, 528, 532]). Kohavi discloses these limitations in an analogous art for the purpose of showing how the decision tree branches off into a plurality of decision points.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to use a greedy approach with the motivation of using a decision tree that will generate many decision points.

As per claim 22, Tom discloses:

Soliciting the sub-population identified, (Col. 8, lines 8-10, [providing data from the application to be evaluated]).

Tom doesn't specifically use the word "solicit", however, the performance of risk and credit analysis on financial service applications represents the solicitation since financial applications can be evaluated for risk and credit analysis in order to urge, entice or lure an applicant into getting a financial service.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to solicit applicants with the motivation of enticing the applicant to receive a financial service.

As per claims 23, 27, Tom fails to disclose wherein the method is performed by execution of a computer program by a processor from a computer-readable medium, but does disclose using a computer system by way of neural network as shown in Fig. 1.

However, Kohavi discloses:

wherein the method is performed by execution of a computer program by a processor from a computer-readable medium, (col. 7, lines 55-56, [computer program residing in a computer readable medium]). Kohavi discloses this limitation in an analogous art for the purpose of showing that a processor aids in performing the steps of the invention.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to perform a method by execution of a computer program by a processor from a computer-readable medium with the motivation of implementing a computerized process.

As per claim 26, Tom fails to disclose wherein soliciting the sub-population identified comprises one of: calling each of a plurality of members of the sub-population, mailing a solicitation to each of the plurality of members of the sub-population..., but does disclose a system that uses decision process and model to perform an evaluation" in Col. 7, lines 10-22.

However, Kohavi discloses:

wherein soliciting the sub-population identified comprises mailing a solicitation to each of a plurality of members of the sub-population, (Col. 1, lines 52-57, [mail sent only

to people who are labeled by classifier). Kohavi discloses this limitation in an analogous art for the purpose of sending mail to a population during a campaign.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to mail a solicitation to each of a plurality of members of the sub-population with the motivation of utilizing postal services for solicitation.

10.   Claim 9 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tom (US 5,696,907) as applied to claim 1 above, and further in view of Amado (5,701,400).

As per claim 9, both Tom fails to disclose wherein soliciting the sub-population identified comprises e-mailing a solicitation to each of a plurality of members of the sub-population, however, Tom does disclose a system that uses decision process and models to perform an evaluation in Col. 7, lines 10-22.

However, Amado discloses:

wherein soliciting the sub-population identified comprises e-mailing a solicitation to each of a plurality of members of the sub-population, (Col. 25, lines 50-53, [E-mail]). Amado discloses this limitation in an analogous art for the purpose of showing that E-mail can be used to generating diagnostics.

It would have been obvious to one of ordinary skill in the art at the time of the applicant's invention to e-mail a solicitation to each of a plurality of members of the sub-population with the motivation of showing that a solicitation can be sent electronically

Allowable Subject Matter

11.   Claims 12, 25 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 12, 25 are objected to because prior art does not disclose having a solicitation group with a first value and a non-solicitation group with a second value in a sample population and setting purchase variables to the first value for each of the members of the population that made a purchase and to the second value for each of the plurality of members for the population that did not make the purchase.

Conclusion

12.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Akiba K Robinson-Boyce whose telephone number is 703-305-1340. The examiner can normally be reached on Monday-Friday 8:30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tariq Hafiz can be reached on 703-305-9643. The fax phone numbers for the organization where this application or proceeding is assigned are 703-746-7238 [After final communications, labeled "Box AF"], 703-746-7239 [Official Communications], and 703-746-7150 [Informal/Draft Communications, labeled "PROPOSED" or "DRAFT"].

Any inquiry of a general nature or relating to the status of this application or

proceeding should be directed to the receptionist whose telephone number is 703-305-

3900.

A. R. B.
April 28, 2004

TARIQ R. HAFIZ
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 3600